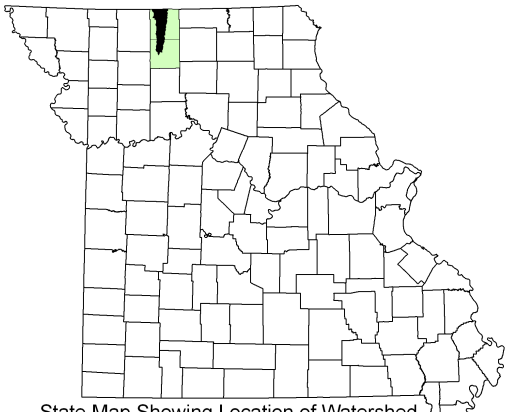
Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Weldon River

Water Body Segment at a Glance:

County: Mercer/Grundy
Nearby Cities: Princeton
Length of impaired segment: 42 miles
Pollutant: Bacteria
Source: Rural Nonpoint Source
Water Body ID: 0560


State Map Showing Location of Watershed

Scheduled for TMDL development: 2013

Description of the Problem

Designated beneficial uses of Weldon River

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health (Fish Consumption)
- Whole Body Contact Recreation – Category B

Use that is impaired

- Whole Body Contact Recreation – Category B

Standards that apply

- Missouri's Water Quality Standards at 10 CSR 20-7.031(4)(C) state that the *E. coli* bacteria count shall not exceed 126 colonies per 100 milliliters of water (126 col/100 mL) for Category A and 206 col/100 mL for Category B waters. This count is the geometric mean during the recreational season (April 1- October 31) in waters designated for whole body contact recreation.

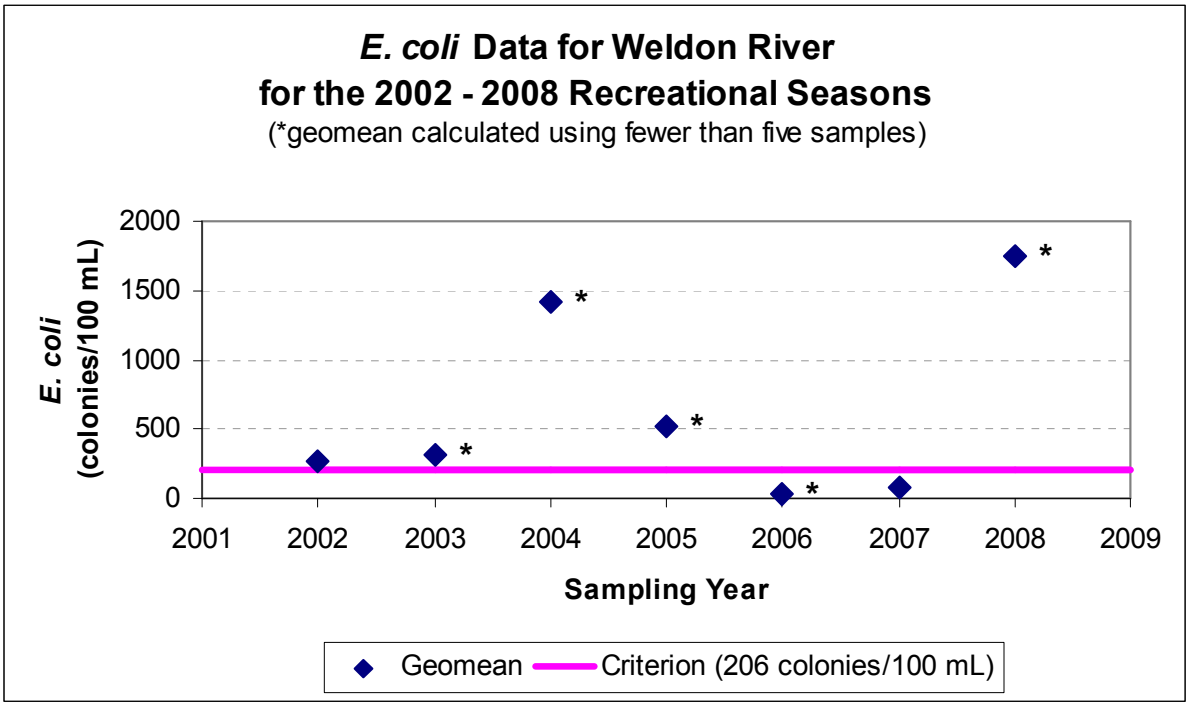
Background information and water quality data

Weldon River is a prairie stream in northern Missouri. It begins in Iowa and flows south to join the Thompson River in Grundy County. It is designated as Category B for the whole body contact recreation use, which means it has places deep enough for total immersion (i.e., swimming), but they may be on private lands or inaccessible to the public. Data used in determining impairment was collected by the U.S. Geological Survey from 2002-2008.

Excessive amounts of fecal bacteria in surface water used for recreation are an indication of an increased risk of pathogen-induced illness to humans. Infections due to pathogen-contaminated waters include gastrointestinal, respiratory, eye, ear, nose, throat and skin diseases. *E. coli*, are bacteria found in the intestines of warm blooded animals and are used as indicators of the risk of waterborne disease from pathogenic (disease causing) bacteria or viruses. Most *E. coli* strains are harmless, but some can cause serious illness in humans and are occasionally responsible for product recalls. The harmless strains are part of the normal flora of the intestines, and can benefit their hosts by preventing the establishment of pathogenic bacteria within the intestine[1,2]. Missouri's bacteria criteria are based on specific levels of risk of acute gastrointestinal illness. The levels of risk correlating to these criteria are no more than eight illnesses per 1,000 swimmers in fresh water.

A water body is judged to be impaired by bacteria if the geometric mean exceeds the criterion in any of the last three years for which adequate data is available. The data must include at least five samples per year during the recreation season. The USGS data collected from 2002-2008 showed that the geometric mean exceeded the criteria of 206 col/100 mL for Category B in 2002. 2007 data had five samples, but met the criterion. Four other years exceeded the criterion, but had fewer than five samples.

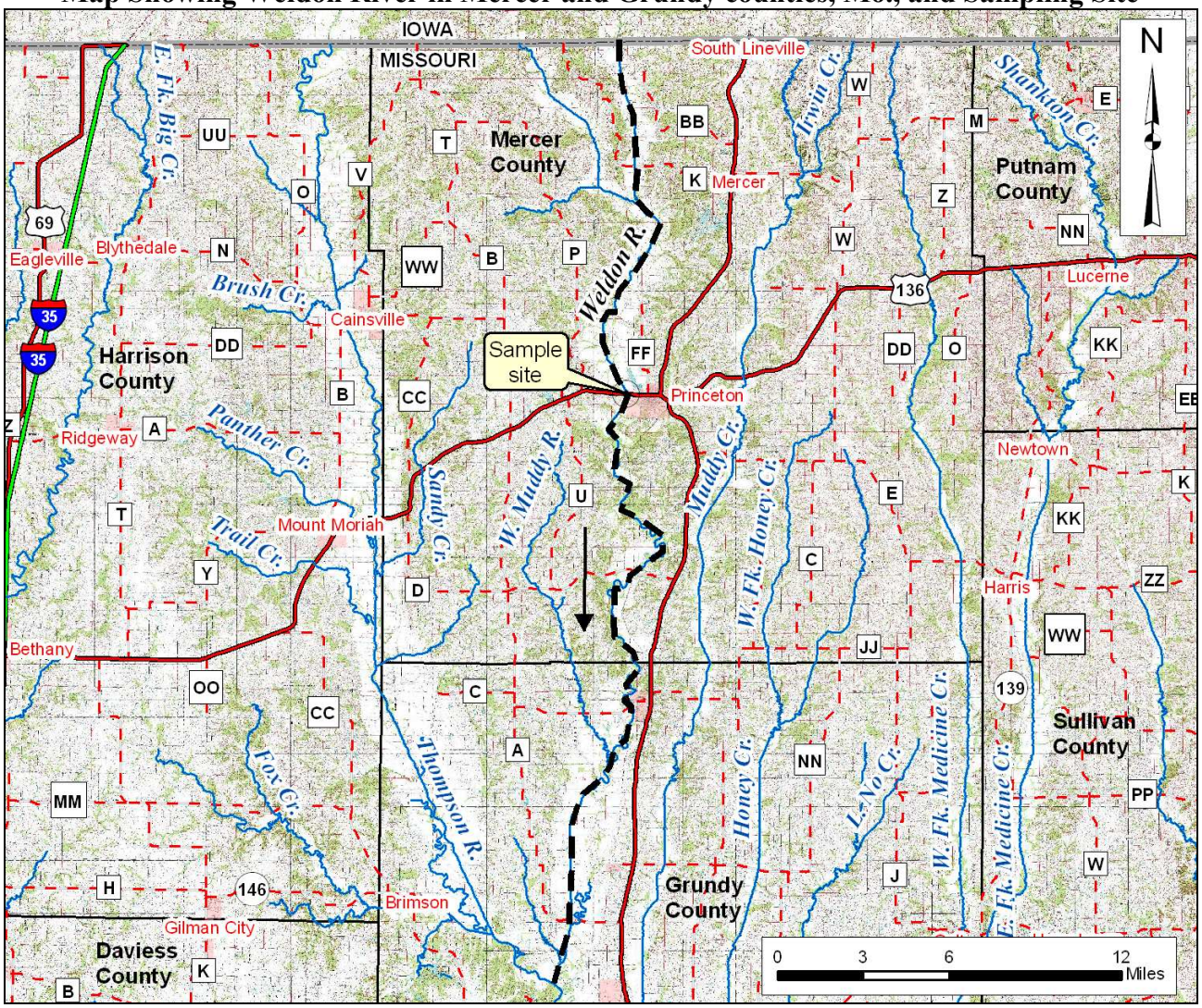
People can protect themselves from waterborne illness by avoiding contact with contaminated water. However, when swimming anywhere, it is wise to take common sense precautions. These include washing hands before eating, showering after swimming and avoiding exposure to questionable water if you have open cuts or wounds.



[1] Hudault S, Guignot J, Servin AL (July 2001). "*Escherichia coli* strains colonising the gastrointestinal tract protect germfree mice against *Salmonella typhimurium* infection". *Gut* **49** (1): 47–55

[2] Reid G, Howard J, Gan BS (September 2001). "Can bacterial interference prevent infection?". *Trends Microbiol.* **9** (9): 424–8.

Map Showing Weldon River in Mercer and Grundy counties, Mo., and Sampling Site



Sample Site
Weldon River at U.S. Highway 136

For more information call or write:
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